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Citation: Gilloteaux, Jacques (2011) A New Cell Death Found In Tumour Cells Induced By Oxidative Stress Mechanism. In: Northumbria Research Conference, 5-6 May 2011, Northumbria University, Newcastle-upon-Tyne.

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Autoschizis: A New Cell Death Found In Tumour Cells Induced By Oxidative Stress Mechanism

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The incidence of carcinomas in many organs and in carcinogenesis was found to be in direct relationships with the repressed activity of nucleases (DNases and RNases) in tumours. Hence, a possible reactivation of nucleases could be envisaged to decrease the resistance of those cancer cells to radiation and chemotherapy. A co-administration of ascorbate (VC) and menadione (VK3) to a variety of carcinoma cell lines resulted in tumor specific antitumour activity of those aforementioned therapies at doses that were 10-50 times lower when either vitamin was administered alone.

Between 1995 and 1998 studies with human bladder carcinoma cells treated by VC+VK3, showed with microscopy and cytometry techniques that peculiar cell excisions were induced and we were convinced that a special way of cell death, named autoschizis, different than apoptosis, had occurred in tumour cells. Accumulated similar results collected from 1998 until now, using morphology, biochemistry and toxicology techniques on human carcinoma cell lines (bladder, prostate, ovarian, breast, renal, etc) and of the same as implanted in nude mice solid tumours support that VC+VK3 combination is an effective chemosensitizer that induces little systemic or major organ pathology. Data support the contention that such combined vitamin treatment could be used as adjuvant or oncologic treatment to treat and degrade without side effects, and inexpensively, all kinds of proliferating malignant tumours in human.